

Department of Water Supply
County of Maui

MAUI ISLAND WATER USE & DEVELOPMENT PLAN UPDATE

Hāna
April 19, 2016

Presentation Topics

- Water Use & Development Plan - Purpose and Requirements
- Background: Hawai`i Water Plan Update Status
- Maui Island WUDP approach
- Regional Issues: Hāna
- Next Steps

WUDP Purpose & Requirements

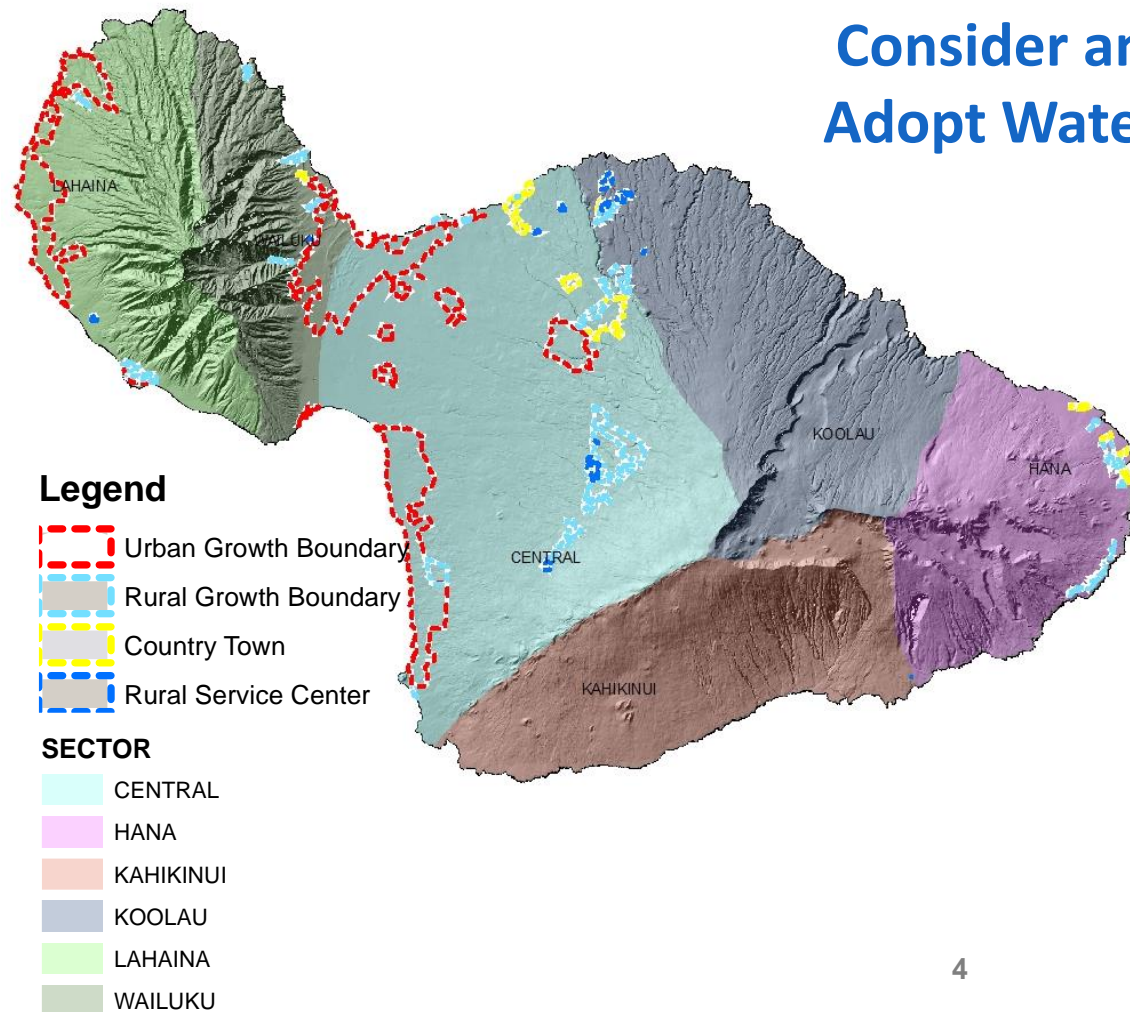
- ◆ 20-year plan
- ◆ Conservation, development, use of water resources
- ◆ Guidance to Commission on Water Resource Management
- ◆ Future needs of County, Dept. of Hawaiian Homelands, State
- ◆ Allocate water to land use per Maui Island Plan
- ◆ Plan by ground and surface water units
- ◆ Consistency with Hawai`i Water Plan, County land use plans

HRS §174C-31, HAR §13-170-30 – 32, Maui County Code Chapter 14.02

WUDP Purpose & Requirements

Allocate water to **land use in Maui Island Plan** by aquifers

Consider and Protect **Public Trust Uses**
Adopt Water Resources **Trust Principles**



Kuleana rights

Maintenance of waters in their natural state (“resource protection”)

Domestic use (primarily drinking water)

Hawaiian traditional and customary practices, including appurtenant rights

DHHL water reservations for future reasonable-beneficial use

Hawai'i Water Plan Status

County Plans

Hawai'i- adopted
Maui, Kaua'i, O'ahu
in progress



Water Resource Protection
Water Quality
State Water Projects
Agricultural Plan



Hawai'i Water Plan

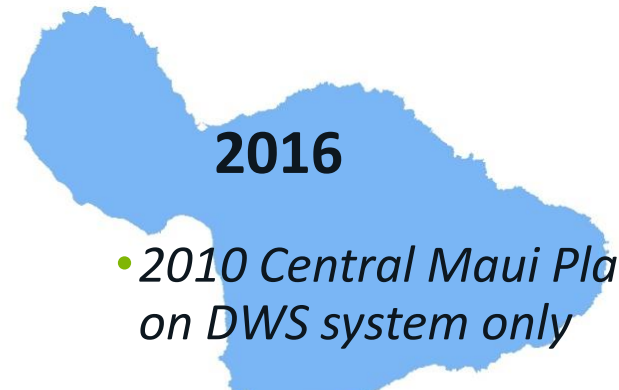
MAUI COUNTY WUDP



2016...



2011



2016

- *2010 Central Maui Plan on DWS system only*
- *Not approved by CWRM*
- *Revised Scope 2012*

How Does the WUDP Affect Me?

Your involvement in
WUDP process

- Seek real solutions to conflicts
- Identify wide range of options, scenarios

WUDP considers water
resource management

- Sustainable water resources for the future
- Protects your investment in property and community

WUDP vetted by the
community, adopted by
County and State

- Sound foundation for decision making and action

WUDP Approach

The WUDP will:

- Support and implement Maui Island Plan as technical document
- Use integrated resource planning based on hydrologic units
- Include all water systems and water users on Maui Island
- Apply updated data, scientific studies, climate models
- Recommend water allocation policies

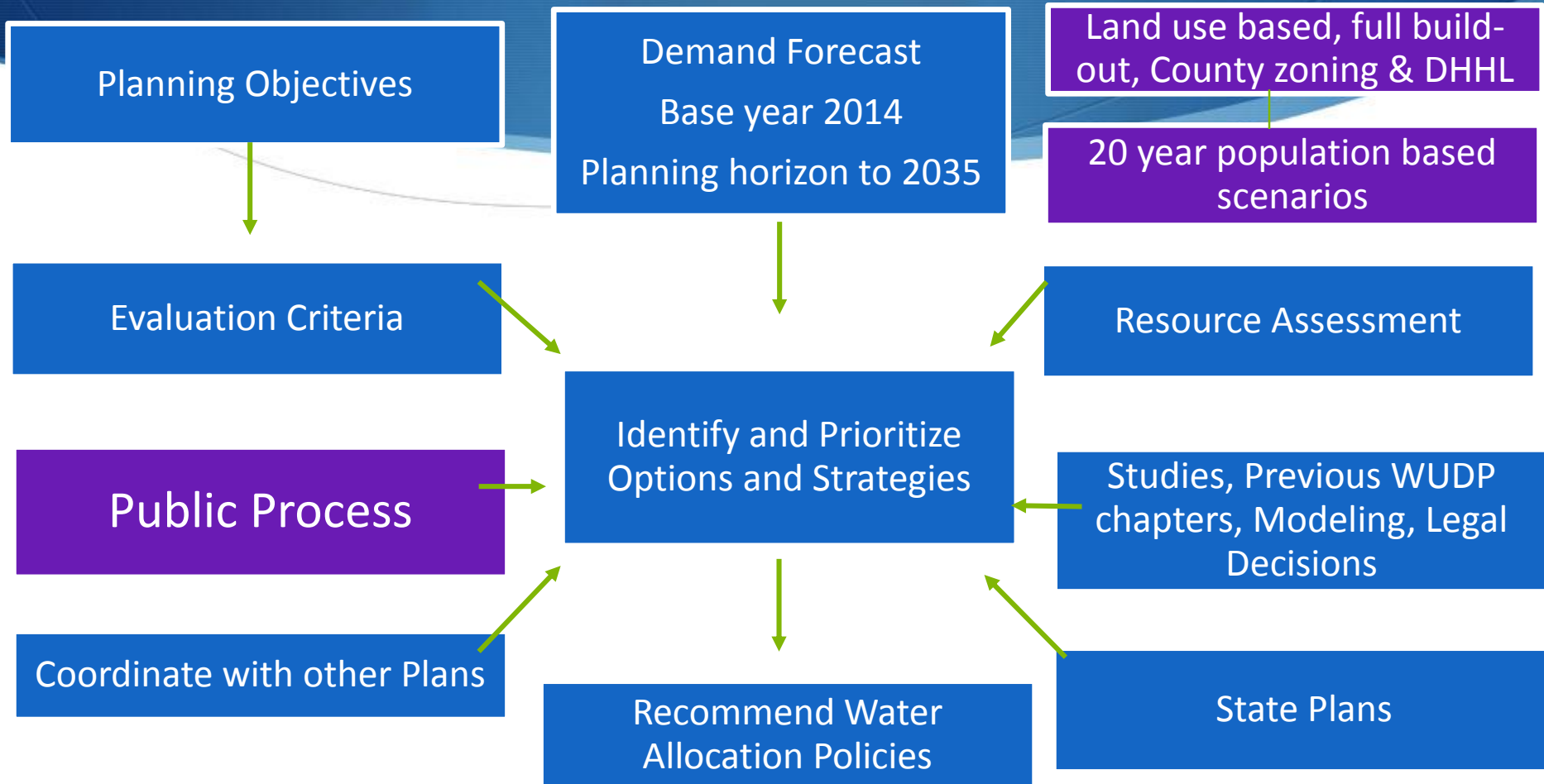
The WUDP will not:

- Propose growth rates or locations different from Maui Island Plan
- Contain CIP level detail
- Be DWS centric

Major Uncertainties:

- Court cases- Na Wai 'Eha & East Maui Streams
- Future agricultural use of HC&S Lands

Integrated Planning Process



Public Process

Multi-Year Foundation:

- Focus Maui Nui
- General Plan Committee
- Past WUDP Public Meetings
- Policy Board Meetings

Ongoing Public Process:

- Public input, targeted meetings
- Opportunities at each draft Plan stage
- Regional Public Meetings
- Board of Water Supply
- County Council
- CWRM

Planning Objectives

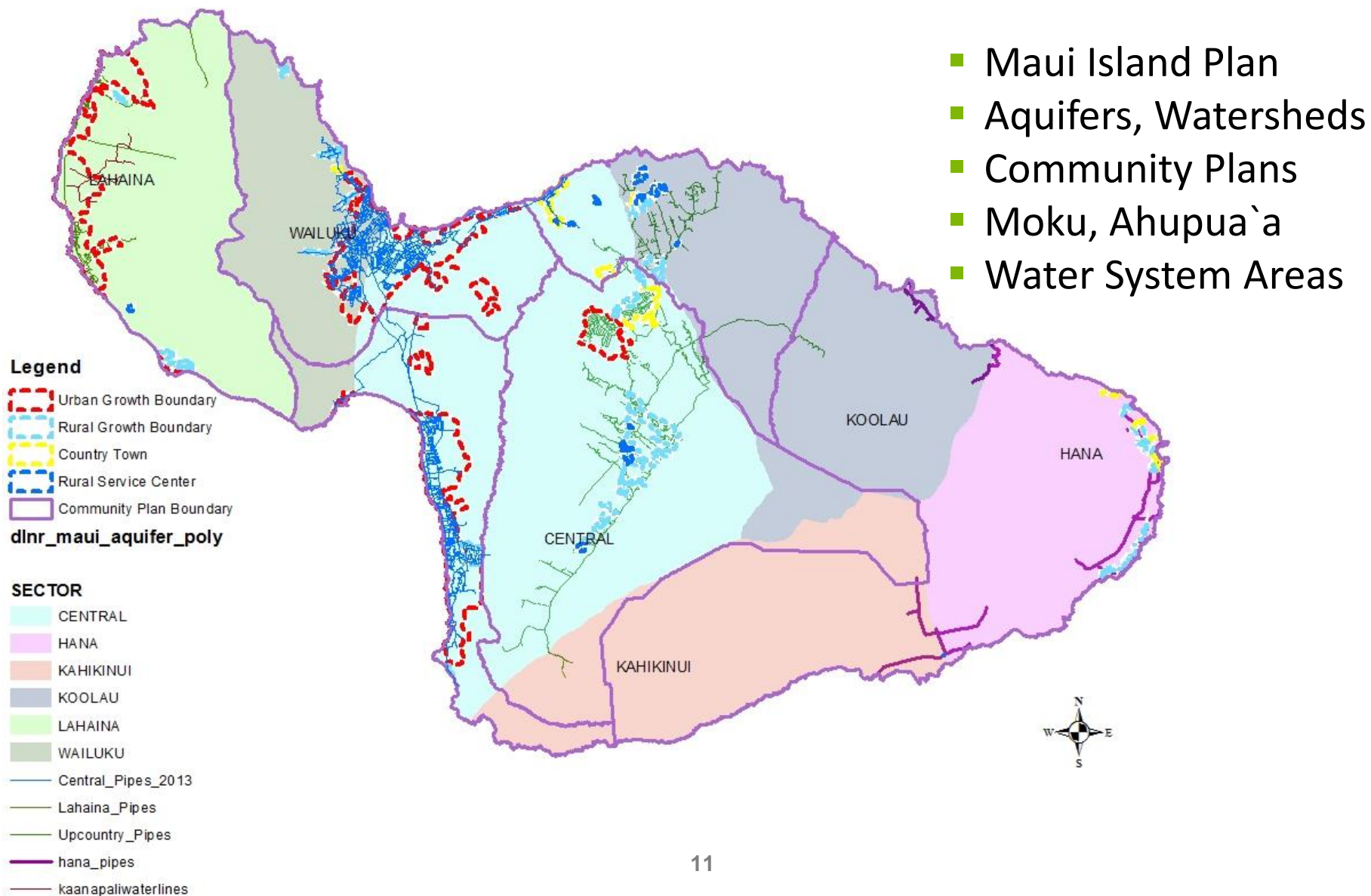
Derived from:

- Maui Island Plan
- State Plans
- WUDP public process
- Policy board meetings

More input is welcome!

Objective	Description
Availability	Provide Adequate Volume of Water Supply
Quality	Maximize Water Quality
Reliability	Maximize Reliability of Water Service
Efficiency	Maximize Efficiency of Water Use
Cost	Minimize Cost of Water Supply
Viability	Establish Viable Plans
Conformity	Maintain Consistency with General & Community Plans
Equity	Manage Water Equitably
DHHL	Provide for DHHL Needs
Agriculture	Provide for Agricultural Needs
Culture	Protect Cultural Resources
Sustainability	Maintain Sustainable Resources
Environment	Minimize Adverse Environmental Impacts
Resources	Protect Water Resources
Streams	Protect and Restore Streams

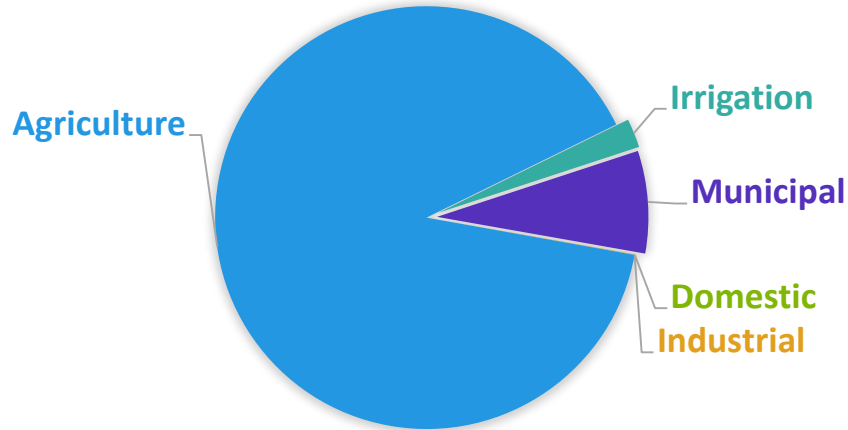
Multiple Resource Assessment & Planning Boundaries



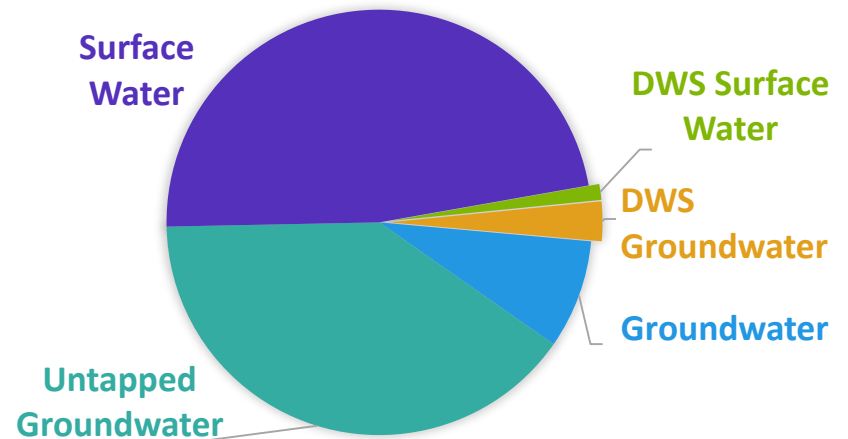
Water Use by Resource & Use Type

Maui Island, 2014

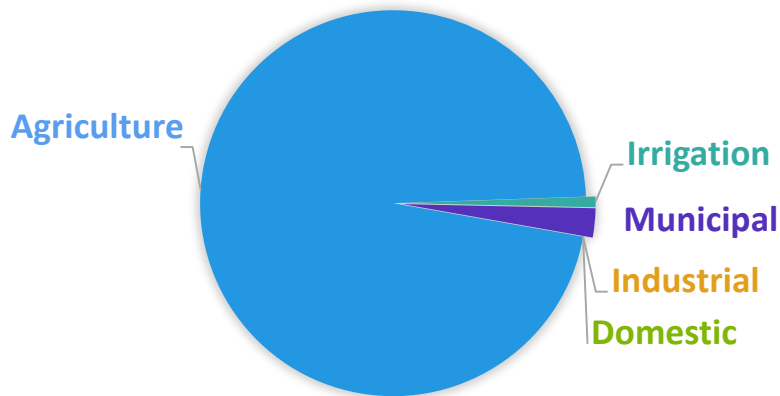
WATER USE BY USE TYPE



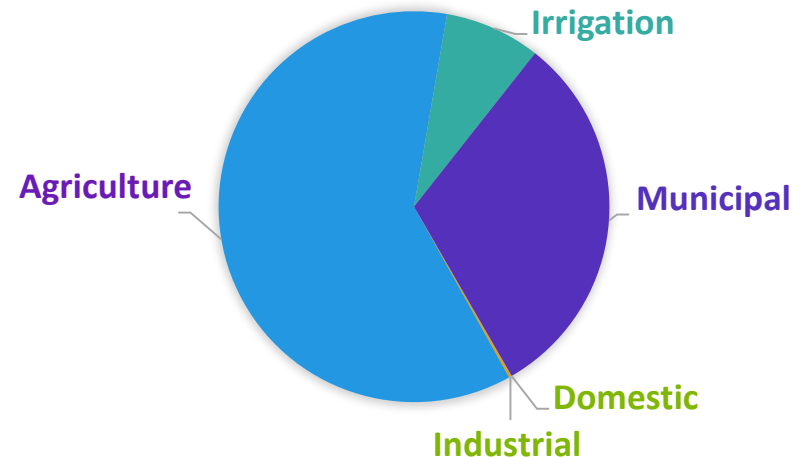
WATER USE BY RESOURCE



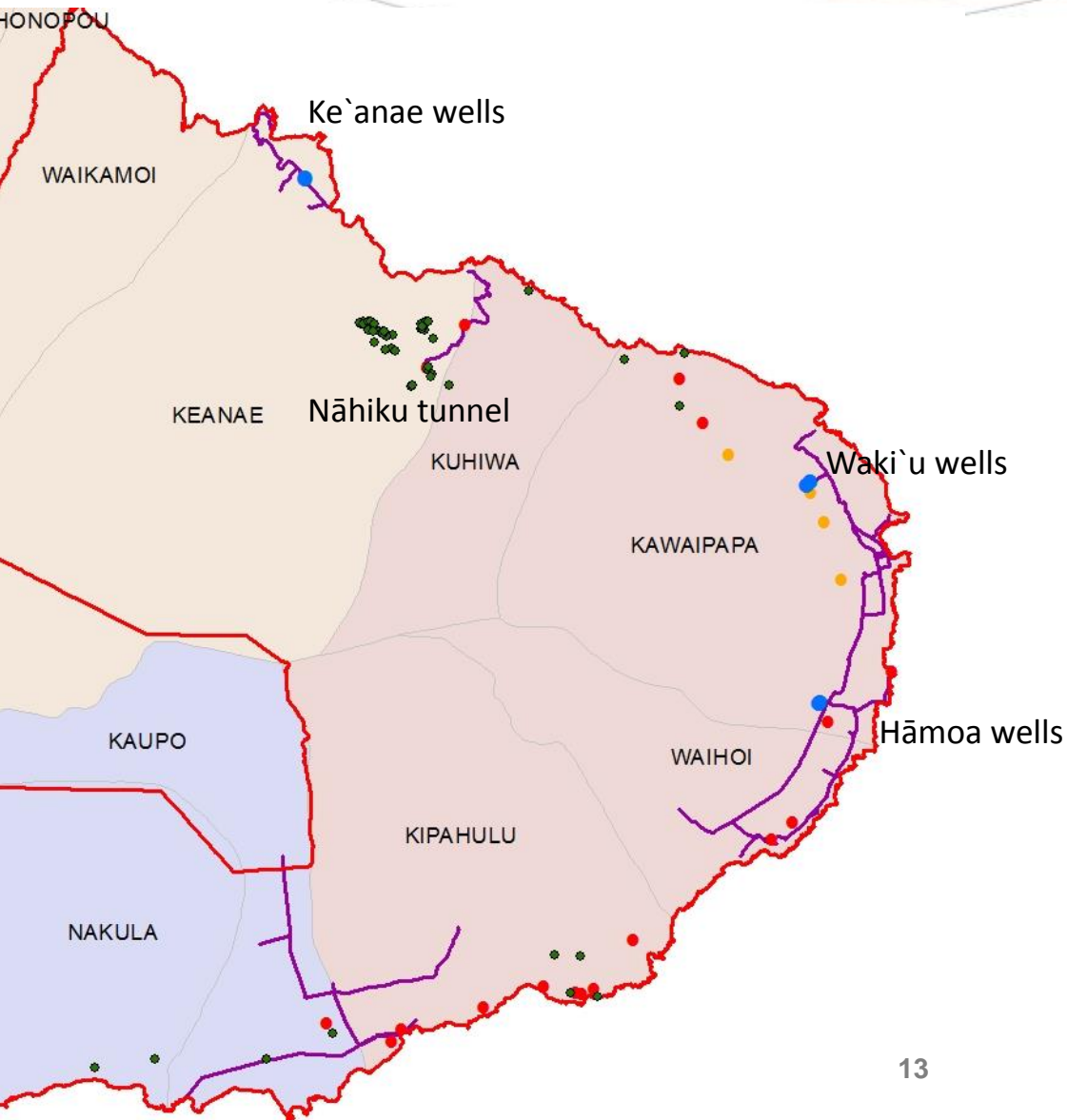
USE TYPE - SURFACE WATER



USE TYPE - GROUNDWATER



Groundwater Use Hāna and Ko'olau





Legend

- maui_dws_wells

Wells







- Other
- DOM; DOMN; DOMNOTH
- MUNCO; MUNPR

-  Community Plan Boundary
-  hana_pipes

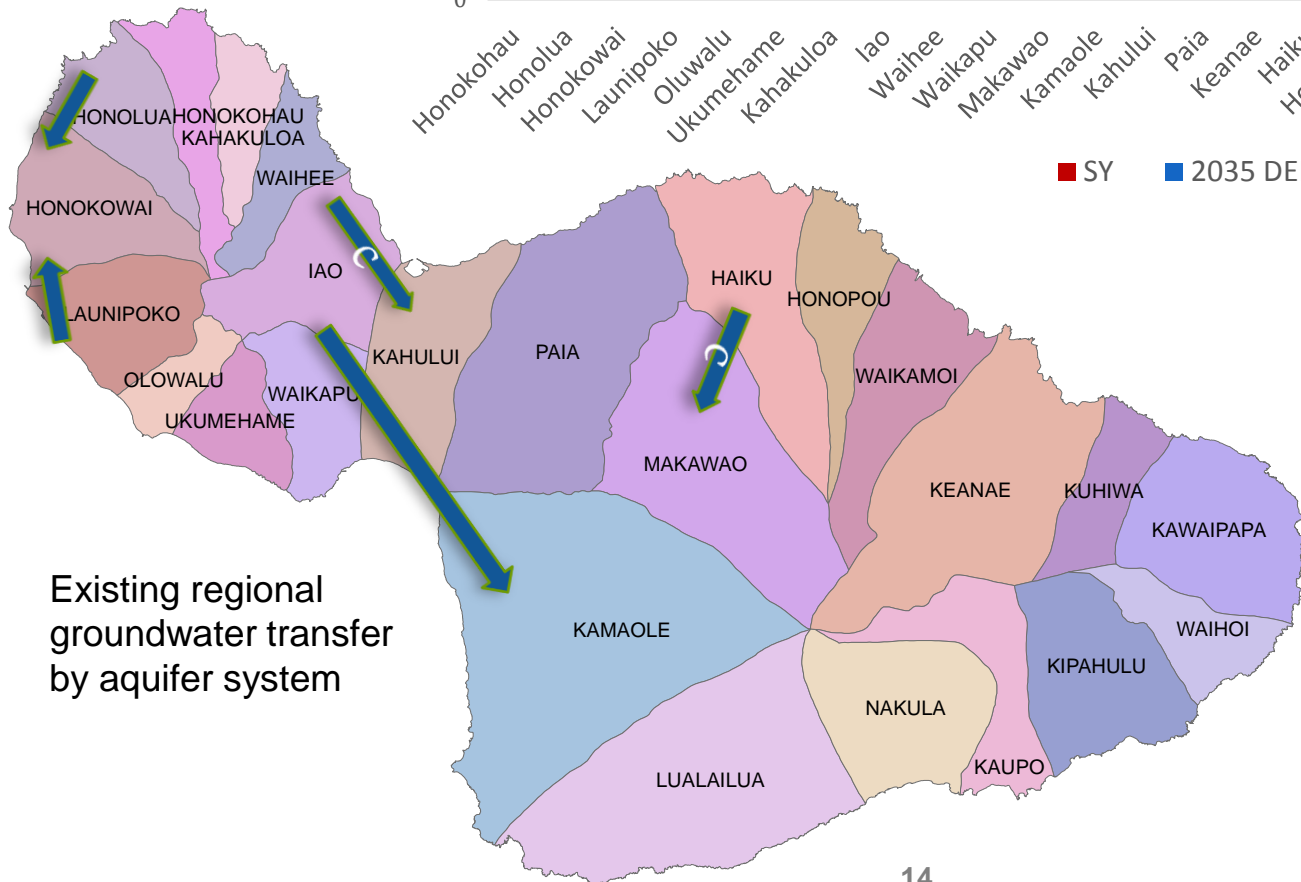
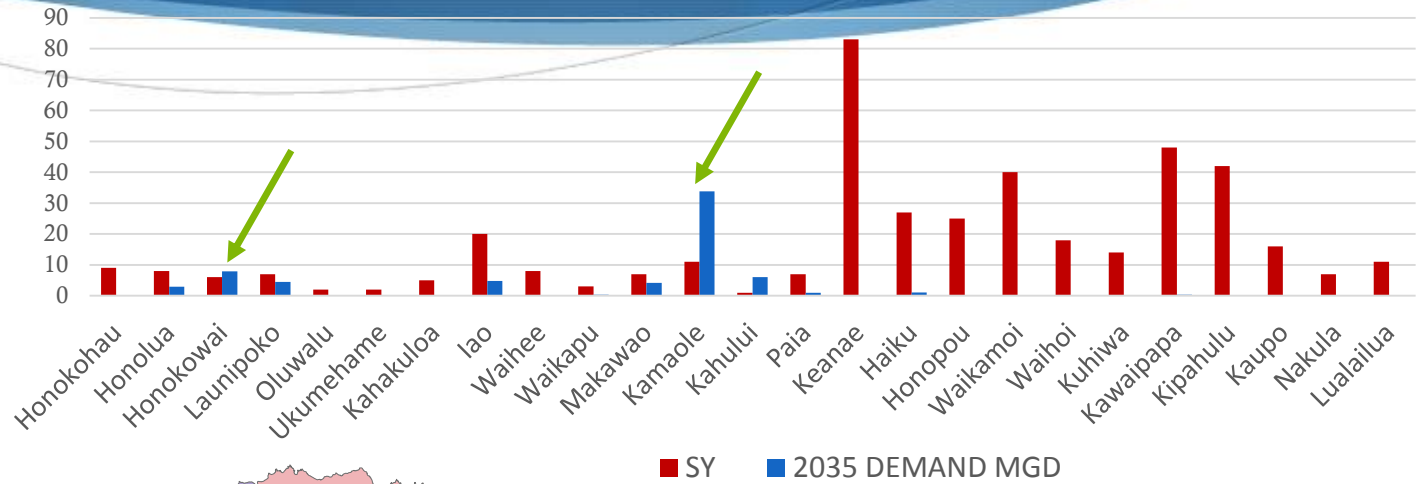
Aquifer



SECTOR

- | | |
|---|-----------|
|  | CENTRAL |
|  | HANA |
|  | KAHIKINUI |
|  | KOOLAU |
|  | LAHAINA |
|  | WAILUKU |

Groundwater and Projected Demand



Surface Water Use Assessment

Na Wai 'Eha

- CWRM provisional order of appurtenant rights; amendments to Interim In-stream Flow Standards (IIFS)
- Surface water use permitting phase
- Petition to amend IIFS, re: HC&S closure

East Maui

- Contested Case Hearings Officer's Proposed Findings of Fact, Conclusion of Law & Decision and Order, Jan. 15, 2016
- Re-opening of Hearing to address change in HC&S business operations, March 10, 2016

West Maui

- USGS Study of Low-flow Characteristics of Streams completed, June 2014
- CWRM staff begin preparing in-stream flow standard assessments



Surface Water Use Hāna and Koʻolau

Koʻolau transfers to DWS Upcountry System:

Makapipi - Waikamoi streams: 3.6 MGD

Haipuaena – Waikamoi streams: 1.6 MGD

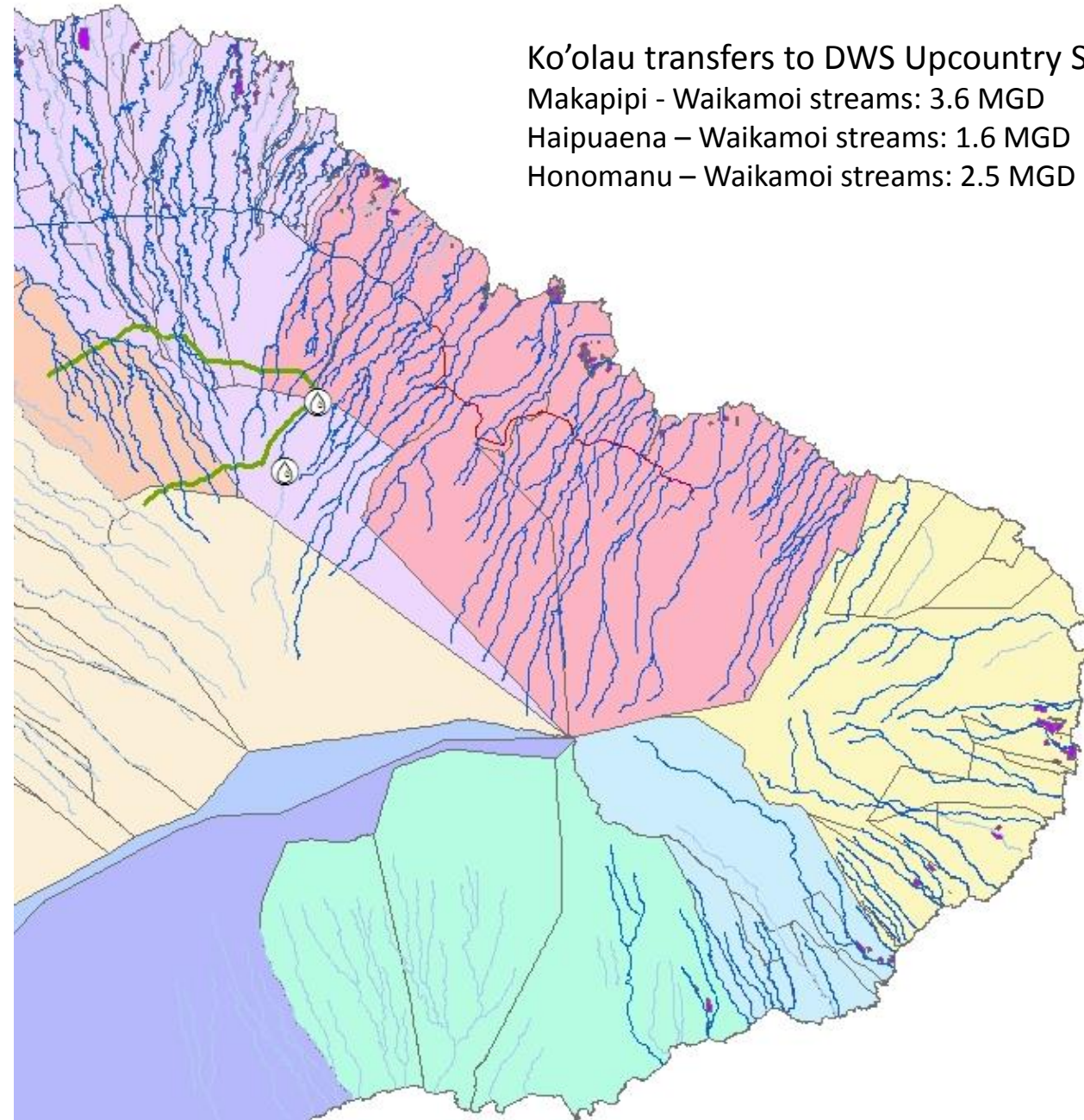
Honomanu – Waikamoi streams: 2.5 MGD

Legend

- Maui_Surface-Intakes
- NON-PERENNIAL
- PERENNIAL
- Koolau Tunnel
- Koolau Flume
- Koolau Ditch
- Wailoa Tunnel
- Waikamoi_ditch_and_pipe
- Maui_kuleana

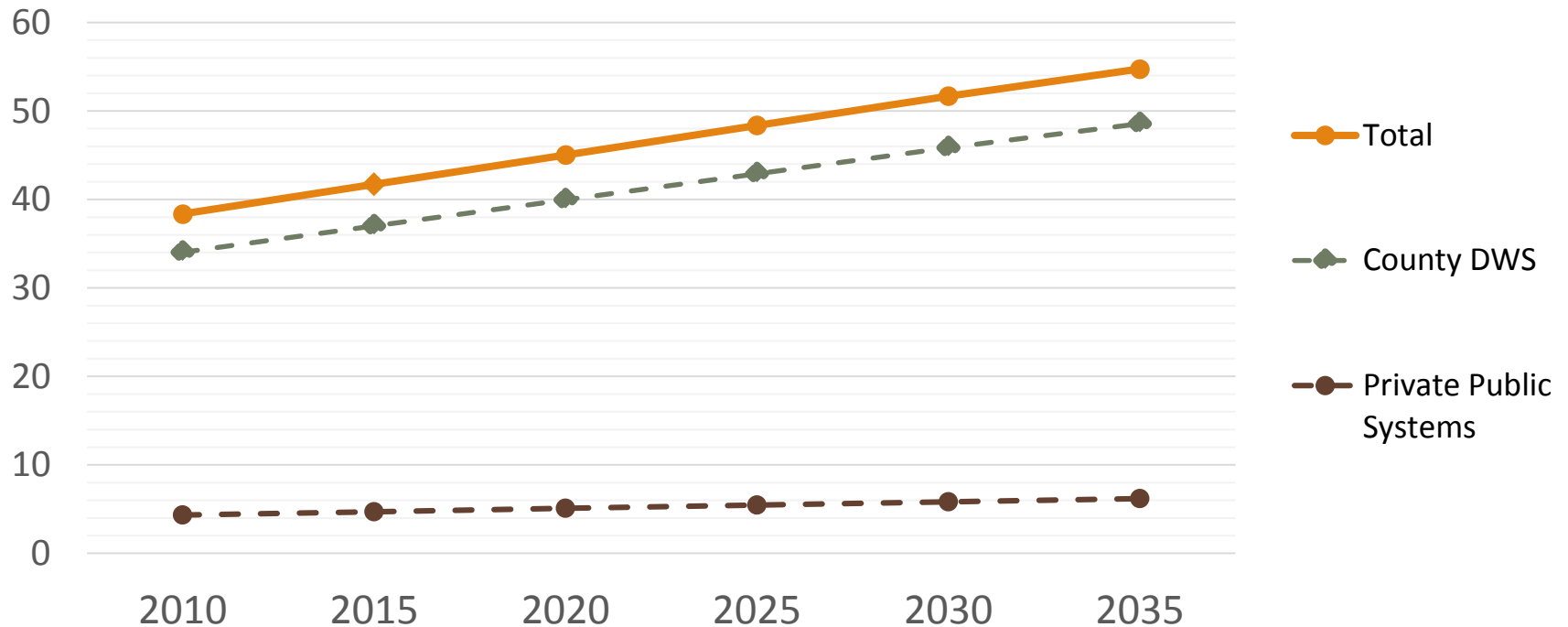
MOKU

- Honua'ula
- Hāmākualoa
- Hāmākuapoko
- Hāna
- Kahikinui
- Kaupō
- Koʻolau
- Kula
- Kā'anapali
- Kīpahulu
- Lāhainā
- Pū'ali Komohana



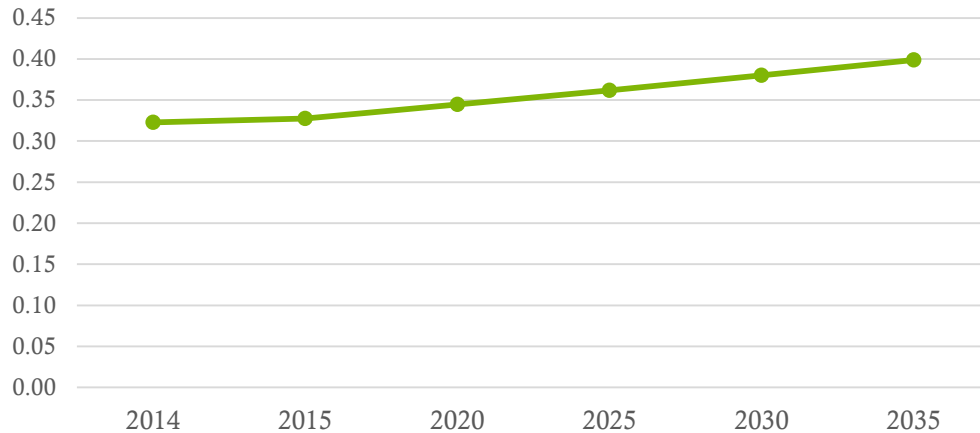
Population Growth Based Water Demand

Maui Island, 2010-2035 (mgd)
Does NOT Include AG Use

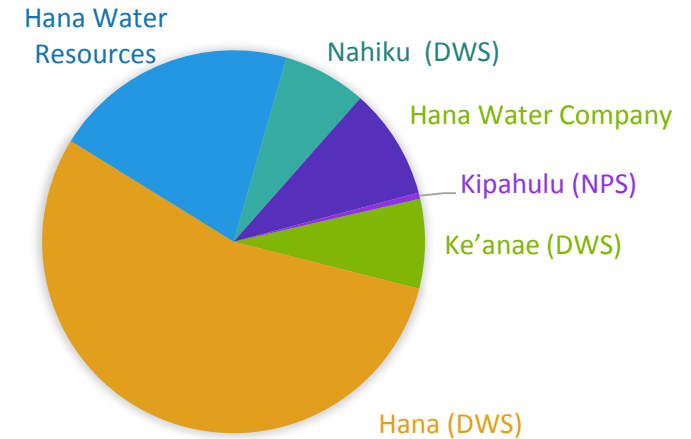


Water Demand – Hāna

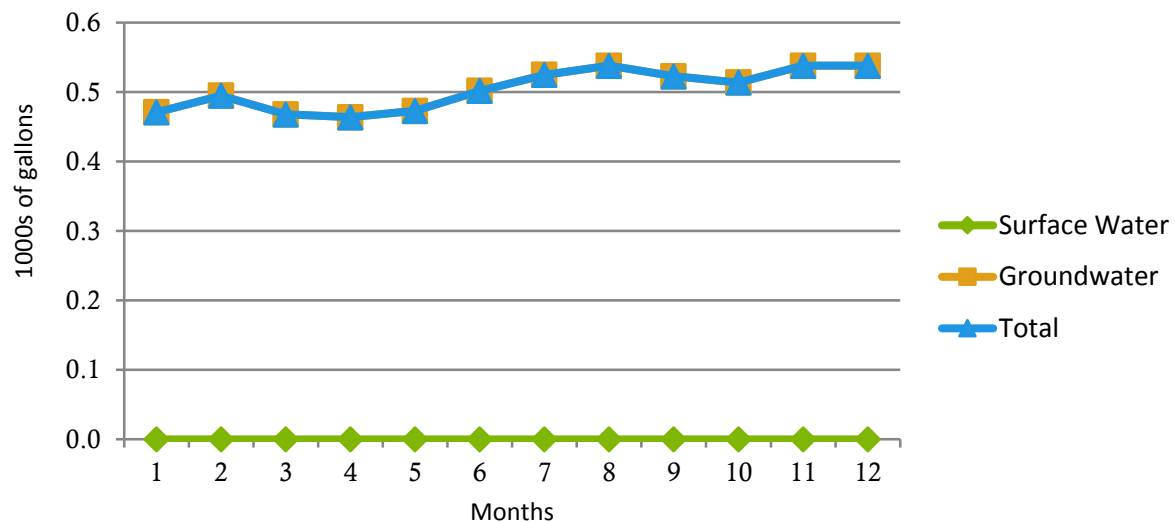
Population Based Water Demand (mgd)



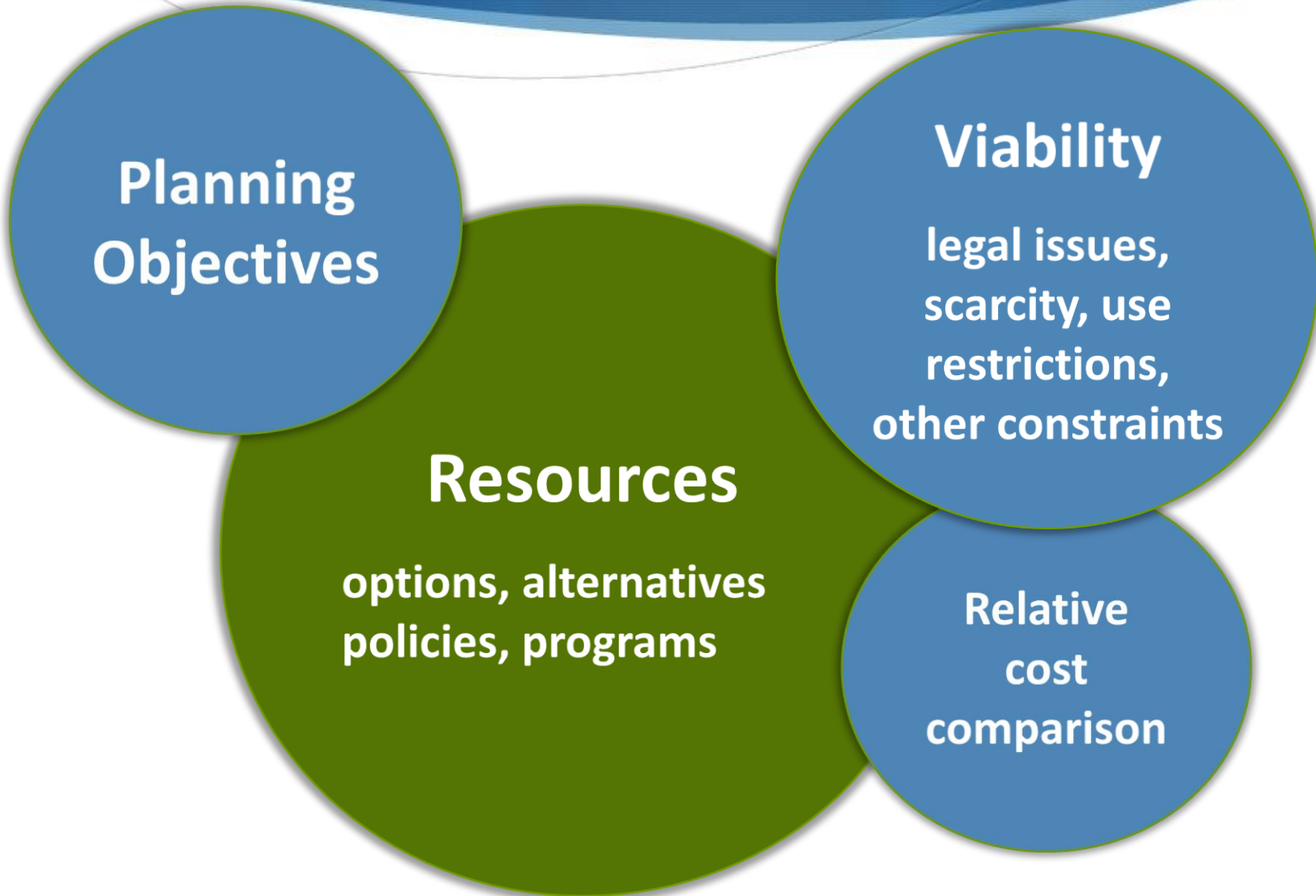
Water Supplied by Purveyors 2014



DWS Water Production (Hāna, Nahiku, Ke'anae, Kāupo) 2014 ADF



Identify, Evaluate & Prioritize Strategy Options



Focus Issues

Competing Interests

Uncertainty

- **Native Hawaiian rights**
- Water allocation policies
- **Agricultural needs**
- Use of irrigation infrastructure
- Use of alternative water sources
- **Resource efficiency & protection**
- Reliability & Alternative Sources
- Drought and climate change
- Other issues!
- Differing planning boundaries
- Conflicting planning objectives
- Policy guidance lacking or unresolved
- Multiple stakeholders
- Issues differ geographically
- County Dept. of Water Supply vs other systems
- **Contingencies (court cases) and uncertainty (future ag)**

Kuleana Rights & Public Trust Purposes

- **Kuleana rights**-appurtenant water rights
- **Public Trust Uses:** No absolute **priorities between** broad categories of public trust uses (environmental protection, native Hawaiian traditional and customary practices including appurtenant rights, DHHL, domestic uses)
- **Water Resources Trust Principles:**
 - ... Competing public and private water uses must be weighed on a case-by case basis...*
 - ...the public trust may have to accommodate uses inconsistent with the mandate of protection*
 - ...requires that all uses, offstream or instream, public or private, promote the **best economic and social interests** of the people of the State..*



East Maui Streams Contested Case

CCH MA13-01 Hearings Officer's Proposed Findings of Fact, Conclusions of Law & Decision and Order, Jan 15, 2016

- Instream Flow Standards to protect instream values (including kuleana)
- Restore 18 mgd from HC&S water needs for sugar
- Insignificant impact on municipal use

Re-opening of Hearing for Limited Purposes, March 10, 2016

- Revise 'Findings of Fact' on off stream use
- Rebalance instream vs non instream use
- Reassess proposed instream flow standards

Instream Flow Standard: " quantity or flow of water required to be present at a specific location in a stream system at certain specified times of the year to protect beneficial instream uses (fish and wildlife habitat, aesthetic values, traditional Hawaiian uses.)



WUDP Opportunities

- Reflect community objectives, not County Department of Water Supply centric
- Based on alternative instream flow standards
- outcomes, evaluate availability of surface water for future agricultural uses and other non public trust uses
- Evaluate alternative agricultural scenarios against planning objectives

What are East Maui's regional issues and priorities?

Key issues?

A disconnect between law and what is diverted; the public trust is not enforced?

Integrated watershed management difficult due to fragmented land ownership?

Lack of data establishing multiple water users needs, including ahupua`a restoration?

Kuleana and moku not consulted in Maui Island Plan?

Thirsty off-stream uses in dry season?

Water transfers for planned growth in leeward areas?



WUDP Policy and Strategy Options

- Promote and fund **ahupua`a based watershed protection** efforts
- **Consult moku** representative on regional water issues
- **Reduce reliance on surface water in dry season.** Limit diversions for non public trust uses seasonally
- Continue to develop **new groundwater sources within sustainable yields** to accommodate planned growth and reliable capacity
- Diversify using **alternative sources** where feasible
- Implement **aggressive conservation for non domestic uses**

Resource Protection and Restoration

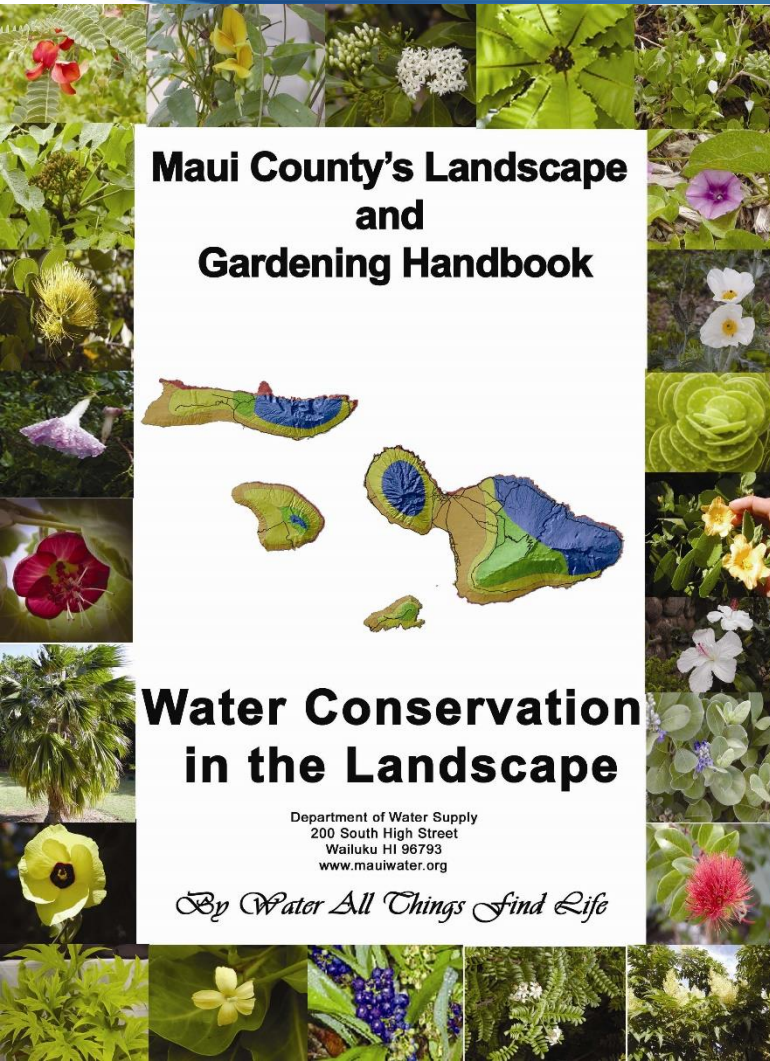
“Enhance vitality and functioning of streams, balance multiple needs of community”

“Improve water quality and the monitoring of public and private water systems”

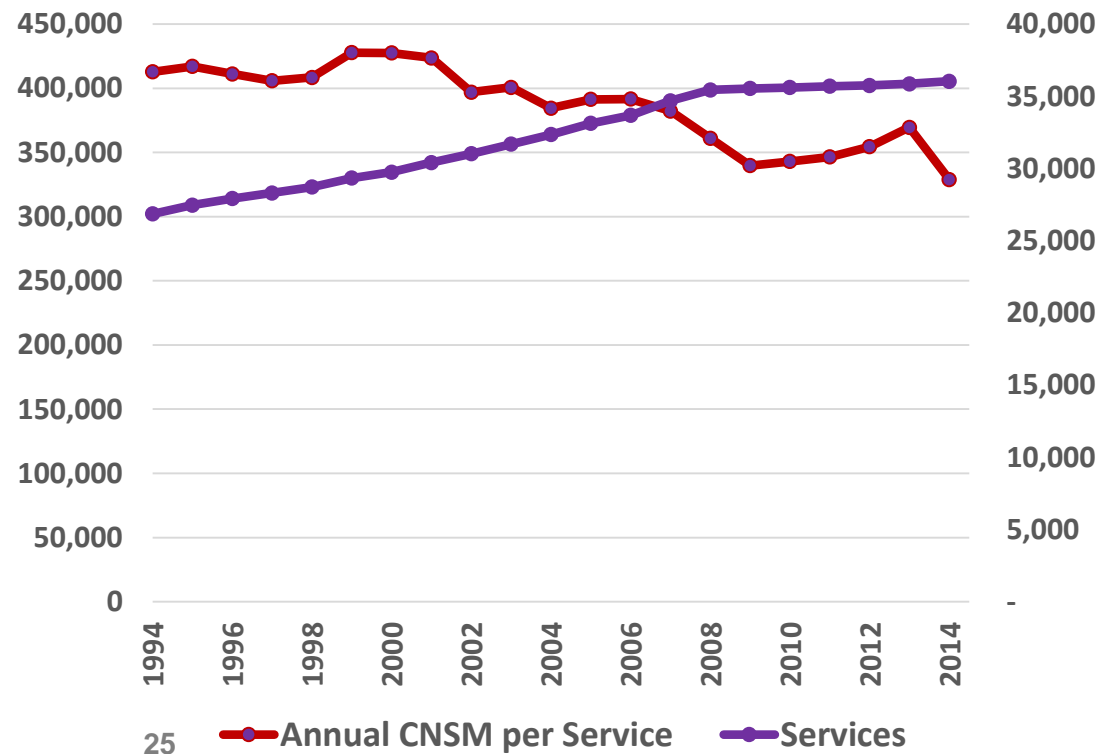
- How can resource protection incorporate ahupua`a (mauka to makai) rather than limited to upper forested watersheds?
- Restrict uses that pose a risk to water quality around drinking water wells (wellhead protection)?
- What is the community's role in resource protection?



Resource Efficiency



METERS AND DEMAND
Maui Island 1994-2014



Next steps...

Saturday Workshops

UPCOUNTRY DISTRICT	CENTRAL DISTRICT	WEST MAUI DISTRICT	HĀNA DISTRICT
Eddie Tam Memorial Center April 23, 2016 10 a.m. - 1:00 p.m.	Kahului Community Center April 30, 2016 10 a.m. - 1:00 p.m.	Lahaina Civic Center May 7, 2016 10 a.m. - 1:00 p.m.	Hana Community Center Helene Hall May 21, 2016 10 a.m. - 1:00 p.m.

Workshop Concepts

- ◆ *Confirm Regional Issues*
- ◆ *Testing the Planning Objectives*
- ◆ *Testing Water Management, Use and Allocation “Guidelines”*
- ◆ *Working the Issues– Options, Consistency with Planning Objectives and Guidelines*
- ◆ *Putting Together the Strategies*

In sum...

- “Sister” document to Maui Island Plan
- Resource based, not DWS centric
- Use previous studies & data
- Continuation of extensive public process
- It’s Maui’s plan - address local conflicts
- Plan for uncertainty

www.mauiwater.org

* * *

Maui County DWS
Water Resources & Planning

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